

Title (en)  
Non-aqueous electrolyte secondary battery

Title (de)  
Sekundärbatterie mit nichtwässrigen Elektrolyten

Title (fr)  
Batterie secondaire à électrolyte nonaqueux

Publication  
**EP 1675208 A3 20070411 (EN)**

Application  
**EP 05025373 A 20010330**

Priority  
• EP 01108177 A 20010330  
• JP 2000102624 A 20000404  
• JP 2000108412 A 20000410  
• JP 2000111044 A 20000412

Abstract (en)  
[origin: EP1143549A2] A non-aqueous electrolyte secondary battery has a positive electrode having a positive electrode collector, on which a positive electrode active material layer containing a positive electrode active material as a complex oxide of Li and transition metals are formed, and a negative electrode having a negative collector, on which a negative electrode active material layer is formed. The non-aqueous electrolyte secondary battery is a gel or solid non-aqueous electrolyte secondary battery having a battery device in which a positive electrode and a negative electrode are laminated with an electrolyte layer therebetween in a film-state packaging member constructed by metal foil laminated films, and containing a lithium salt, a non-aqueous solvent, and a polymer material. The concentration in mass ratio of a free acid in the electrolyte layer is 60 ppm and less. Average particle diameter of the positive electrode active material lies in a range from 10 to 22  $\mu\text{m}$ , the minimum particle diameter is 5  $\mu\text{m}$  or larger, the maximum particle diameter is 50  $\mu\text{m}$  or smaller, and specific surface of the positive electrode active material is 0.25  $\text{m}^2/\text{g}$  or smaller. Lithium carbonate ( $\text{Li}_2\text{CO}_3$ ) contained in the positive electrode active material is 0.15 percent by weight and less. Moisture contained in the positive electrode active material is 300 ppm and less. <IMAGE>

IPC 8 full level  
**H01M 2/02** (2006.01); **H01M 4/02** (2006.01); **H01M 4/131** (2010.01); **H01M 4/505** (2010.01); **H01M 4/52** (2006.01); **H01M 4/525** (2010.01); **H01M 4/58** (2006.01); **H01M 6/18** (2006.01); **H01M 6/22** (2006.01); **H01M 10/0525** (2010.01); **H01M 10/0565** (2010.01); **H01M 10/36** (2006.01); **H01M 10/38** (2006.01); **H01M 10/40** (2006.01); **H01M 50/119** (2021.01); **H01M 50/121** (2021.01); **H01M 50/124** (2021.01); **H01M 50/133** (2021.01); **H01M 50/141** (2021.01); **H01M 50/55** (2021.01); **H01M 50/557** (2021.01); **H01M 4/133** (2010.01); **H01M 4/1391** (2010.01); **H01M 4/1393** (2010.01); **H01M 4/48** (2006.01); **H01M 4/50** (2006.01); **H01M 4/62** (2006.01); **H01M 6/10** (2006.01); **H01M 6/16** (2006.01); **H01M 10/0567** (2010.01); **H01M 10/0587** (2010.01); **H01M 10/42** (2006.01)

CPC (source: EP KR US)  
**H01M 4/131** (2013.01 - EP US); **H01M 4/505** (2013.01 - EP US); **H01M 4/525** (2013.01 - EP US); **H01M 10/0525** (2013.01 - EP US); **H01M 10/0565** (2013.01 - EP US); **H01M 10/38** (2013.01 - KR); **H01M 50/119** (2021.01 - EP KR US); **H01M 50/121** (2021.01 - EP KR US); **H01M 50/124** (2021.01 - EP KR US); **H01M 50/133** (2021.01 - EP KR US); **H01M 50/141** (2021.01 - EP KR US); **H01M 50/55** (2021.01 - EP KR US); **H01M 50/557** (2021.01 - EP KR US); **H01M 4/02** (2013.01 - EP US); **H01M 4/133** (2013.01 - EP US); **H01M 4/1391** (2013.01 - EP US); **H01M 4/1393** (2013.01 - EP US); **H01M 4/62** (2013.01 - EP US); **H01M 6/10** (2013.01 - EP US); **H01M 6/168** (2013.01 - EP US); **H01M 10/0567** (2013.01 - EP US); **H01M 10/0587** (2013.01 - EP US); **H01M 10/4235** (2013.01 - EP US); **H01M 2004/021** (2013.01 - EP US); **H01M 2300/0082** (2013.01 - EP US); **H01M 2300/0085** (2013.01 - EP US); **Y02E 60/10** (2013.01 - EP); **Y02P 70/50** (2015.11 - EP)

Citation (search report)  
• [X] US 5037713 A 19910806 - YOSHINO MASAKI [JP], et al  
• [A] JP H11283668 A 19991015 - SANYO ELECTRIC CO  
• [A] JP H10255860 A 19980925 - ASAHI CHEMICAL IND  
• [A] EP 0462575 A2 19911227 - SONY CORP [JP]  
• [A] JP H0959026 A 19970304 - NIKKI CHEM CO LTD  
• [A] US 5869207 A 19990209 - SAIDI M YAZID [US], et al  
• [A] EP 0536425 A1 19930414 - SONY CORP [JP]  
• [A] JP 2000067869 A 20000303 - NEC CORP

Designating contracting state (EPC)  
DE FI FR GB SE

DOCDB simple family (publication)  
**EP 1143549 A2 20011010; EP 1143549 A3 20041229**; CN 100359745 C 20080102; CN 100394639 C 20080611; CN 1310369 C 20070411; CN 1322026 A 20011114; CN 1571211 A 20050126; CN 1574445 A 20050202; EP 1672730 A2 20060621; EP 1672730 A3 20070411; EP 1672730 B1 20111019; EP 1675208 A2 20060628; EP 1675208 A3 20070411; EP 2264813 A1 20101222; EP 2264813 A8 20110323; EP 2264813 B1 20130102; EP 2849264 A1 20150318; EP 3101715 A1 20161207; JP 2001283910 A 20011012; JP 2001291517 A 20011019; JP 2001297764 A 20011026; JP 4062856 B2 20080319; JP 4106644 B2 20080625; KR 100812549 B1 20080313; KR 20010095309 A 20011103; TW 492210 B 20020621; US 2002031703 A1 20020314; US 2005153210 A1 20050714; US 2005175891 A1 20050811; US 2005186472 A1 20050825; US 6967066 B2 20051122; US 7223495 B2 20070529; US 7563539 B2 20090721

DOCDB simple family (application)  
**EP 01108177 A 20010330; CN 01121438 A 20010404; CN 200410056794 A 20010404; CN 200410056795 A 20010404;** EP 05025372 A 20010330; EP 05025373 A 20010330; EP 10009818 A 20010330; EP 14003948 A 20010330; EP 16178916 A 20010330; JP 2000102624 A 20000404; JP 2000108412 A 20000410; JP 2000111044 A 20000412; KR 20010017881 A 20010404; TW 90107595 A 20010330; US 7350905 A 20050307; US 7351005 A 20050307; US 7351105 A 20050307; US 82598801 A 20010404